

# INTERNATIONAL SEARCH REPORT

Inter I Application No  
PCT/IB 03/02541

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 B01J20/18 B01D53/04 B01J20/34 B01D15/00 C10G25/05		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 B01J B01D C10G		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, WPI Data, PAJ		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 511 885 A (CECA SA) 4 November 1992 (1992-11-04) page 2, line 48 page 2, line 33 - line 53 -----	1,3,4,8, 13-16
A	WO 00/71249 A (ZEOCHEM) 30 November 2000 (2000-11-30) page 17, line 14 - line 16 page 16, line 25 - page 17, line 2 page 16, line 3 - line 24 -----	1-4, 13-16
A	US 6 096 194 A (TSYBULEVSKIY ALBERT M ET AL) 1 August 2000 (2000-08-01) column 6, line 7 - line 16 ----- -/--	1-7, 13-15
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C. <input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family		
Date of the actual completion of the international search  13 April 2004		Date of mailing of the international search report 28. 04. 2004
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Authorized officer  Hilgenga, K

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 057 473 A (VOECKS GERALD E ET AL) 15 October 1991 (1991-10-15) column 4, line 1 - line 35 column 5, line 25 -----	1,13,14
A	DATABASE WPI Section Ch, Week 198731 Derwent Publications Ltd., London, GB; Class H01, AN 1987-220075 XP002265291 & SU 1 274 746 A (NATURAL GAS PROC IN) 7 December 1986 (1986-12-07) abstract -----	1,13,14, 17,24
A	DATABASE WPI Section Ch, Week 200067 Derwent Publications Ltd., London, GB; Class H04, AN 2000-687626 XP002265292 & WO 00/67898 A (LIN K) 16 November 2000 (2000-11-16) abstract -----	1,13,14
A	US 6 103 949 A (VIERHEILIG ALBERT A ET AL) 15 August 2000 (2000-08-15) column 9, line 5 - line 19 column 8, line 7 - line 45 column 7, line 20 - line 27 -----	1,10,13
A	US 6 264 881 B1 (D. PLEE) 24 July 2001 (2001-07-24) column 3, line 50 - line 65 -----	1,3-9,13
A	WO 96/03199 A (CECA S.A.) 8 February 1996 (1996-02-08) page 2, line 1 - line 10 page 1, line 33 - line 36 page 3, line 19 - line 22 -----	1
A	LANGMUIR, vol. 15, no. 18, 1999, - 25 February 1999 (1999-02-25) pages 5781-5784, XP002265290 page 5783, right-hand column, last paragraph page 5784; figure 4 -----	
A	DE 37 05 624 A (BAYER AG) 1 September 1988 (1988-09-01) claims 1,2 -----	1
X	US 4 404 118 A (L.E. HERSKOVITS) 13 September 1983 (1983-09-13) column 5, line 32 column 6, line 30 - line 33 column 4, line 55 - line 64 -----	17,21, 24,25
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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>DATABASE WPI Section Ch, Week 199133 Derwent Publications Ltd., London, GB; Class H01, AN 1991-244298 XP002276682 &amp; SU 1 611 859 A (VOLGO-URAL HYDROGEN) 7 December 1990 (1990-12-07) abstract</p>	17-20
A	<p>US 4 098 684 A (R.A INNES) 4 July 1978 (1978-07-04) column 4, line 41 - line 49 column 3, line 15 - line 21</p>	17, 24, 25

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## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-12,13,14-16

A process to produce a formed zeolite for adsorption purposes with improved adsorption and desorption properties. A zeolitic adsorption compound obtainable according to this process.

A process to remove by adsorption one or more low molecular weight organic sulfur compounds from a gaseous or liquid stream, wherein the feed stream is passed through a bed of formed zeolitic molecular sieve.

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2. claims: 17-25

A desorption process for the desorption of organic sulfur compounds from a formed faujasite zeolite, in particular formed zeolite 13X or formed zeolite LSX, or a mixture of formed zeolite 13X and formed zeolite LSX, wherein the desorption is done by a heating profile allowing the organic sulfur compounds to reach their equilibrium adsorption capacity at each temperature.

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